AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 5, 6, 8, and 12, and add new claims 86 – 96 as indicated below. This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A heating apparatus for a coating film comprising:

a chamber having an inner space;

a heating plate for heating a substrate to be processed, said heating plate having a support surface that supports [[a]] the substrate to be processed with a coating film in said chamber;

a partition member arranged in said chamber so as to face the support surface, said partition member partitioning the inner space into first and second spaces and having a plurality of pores allowing the first and second spaces to connect with each other, [[and]] the support surface being set in the first space, and the second space connected with an outside of said chamber through a first opening and a second opening formed in sides of said chamber; and

an air stream formation mechanism forming an air stream in the second space in order to discharge a substance evaporated from the coating film.

2. (Original) The apparatus according to claim 1, wherein said partition member is detachable from said heating apparatus.

3. (Original) The apparatus according to claim 1, wherein said partition member is formed from a material selected from the group consisting of a porous ceramic and a corrosion-resistant metal.

4. (Original) The apparatus according to claim 1, wherein said partition member has a pore diameter falling within a range of 2 μm to 100 μm.

5. (Currently Amended) The apparatus according to claim 1, wherein said air stream formation mechanism and at least one of the conditions selected from the group consisting of a pore diameter and porosity of said partition member are [[so]] adjusted so as to discharge the evaporated substance into the second space via the plurality of pores of said partition member.

6. (Currently Amended) A heating apparatus for a coating film comprising:

a chamber having an inner space;

a heating plate for heating a substrate to be processed, said heating plate having a support surface that supports [[a]] the substrate to be processed with a coating film in said chamber; and

an ~~absorption~~ adsorption plate arranged in said chamber so as to face the support surface, ~~said absorption~~ a surface of the adsorption plate ~~absorbing~~ which faces the substrate to be processed adsorbing a substance evaporated from the coating film.

7. (Original) The apparatus according to claim 6, wherein said adsorption plate is formed from a material selected from the group consisting of an oxide, a nitride, a material with

an oxide surface facing the substrate to be processed, and a material with a nitride surface facing the substrate to be processed.

8. (Currently Amended) The apparatus according to claim 6, wherein said adsorption plate comprises a temperature control function for controlling a temperature of said adsorption plate.

9. (Original) The apparatus according to claim 8, wherein said temperature control function sets the temperature of said adsorption plate to be higher than a temperature of said substrate to be processed.

10. (Original) The apparatus according to claim 8, wherein said temperature control function sets the temperature of said adsorption plate to be lower than a temperature of said substrate to be processed.

11. (Original) The apparatus according to claim 8, wherein said adsorption plate is formed from a material selected from the group consisting of an oxide, a nitride, a material with an oxide surface facing said substrate to be processed, and a material with a nitride surface facing said substrate to be processed.

12. (Currently Amended) The apparatus according to claim 6, wherein said adsorption plate is formed from a metal member, and

said apparatus further comprises a voltage generator for generating an electric field between said heating plate and said metal member.

13. (Original) The apparatus according to claim 12, wherein said metal member receives a voltage lower than said heating plate from said voltage generator, and adsorbs said evaporated substance.

14. (Original) The apparatus according to claim 12, wherein said metal member receives a voltage higher than said heating plate from said voltage generator, and suppresses generation of said evaporated substance.

15. (Withdrawn) A processing apparatus for a resist film comprising:

resist formation means for forming a chemically amplified resist film on a substrate to be processed;

exposure means for irradiating the chemically amplified resist film with an energy radiation to form an exposure region having a latent image pattern;

rotation correction means for rotating and correcting a direction of the substrate to be processed;

heating processing means for heating the chemically amplified resist film while supplying an air stream in one direction along the substrate to be processed; and

developing means for developing the chemically amplified resist film.

16. (Withdrawn) A processing method for a resist film comprising:

forming a photoresist film on a substrate to be processed;

heating the substrate to be processed with the photoresist film within a chamber having a partition member, said partition member partitioning said chamber into first and second spaces and having a plurality of pores allowing said first and second spaces to connect with each other, and said substrate to be processed being set in said first space;

flowing a substance evaporated from said substrate to be processed into said second space via said plurality of pores and discharging the evaporated substance from the second space by an air stream during said heating;

exposing said resist film by irradiating with an energy radiation to form an exposure region having a latent image pattern; and

developing said resist film by exposing said resist film to a developing solution to selectively remove part of the photoresist film, and forming a desired pattern on said substrate to be processed.

17. (Withdrawn) The method according to claim 16, wherein said exposing is performed after said heating.

18. (Withdrawn) The method according to claim 17, wherein said developing is performed after the exposing.

19. (Withdrawn) The method according to claim 16, wherein said exposing is performed before said heating.

20. (Withdrawn) The method according to claim 19, wherein said developing is performed after the heating.

21. (Withdrawn) The method according to claim 16, wherein said resist film is a chemically amplified resist.

22. (Withdrawn) The method according to claim 16, wherein said energy radiation is selected from the group consisting of an ultraviolet ray, a far-ultraviolet ray, a vacuum ultraviolet ray, an electron beam, and an X-ray.

23. (Withdrawn) A processing method for a resist film comprising:

forming a resist film on a substrate to be processed;

heating said substrate to be processed within a chamber, said chamber having an adsorption plate so arranged as to face the substrate to be processed;

adsorbing a substance evaporated from said substrate to be processed by the adsorption plate during said heating;

exposing said resist film by irradiating said resist film with an energy radiation to form an exposure region having a latent image pattern; and

developing said resist film.

24. (Withdrawn) The method according to claim 23, said exposing is performed after said heating.

25. (Withdrawn) The method according to claim 24, wherein said developing is performed after said exposing.

26. (Withdrawn) The method according to claim 23, said exposing is performed before said heating.

27. (Withdrawn) The method according to claim 26, wherein said developing is performed after said heating.

28. (Withdrawn) The method according to claim 23, wherein a temperature of said adsorption plate is controlled.

29. (Withdrawn) The method according to claim 28, wherein said adsorption plate is controlled to be lower in temperature than said substrate to be processed.

30. (Withdrawn) The method according to claim 28, wherein said adsorption plate is controlled to be higher in temperature than said substrate to be processed.

31. (Withdrawn) The method according to claim 23, wherein said resist film is a chemically amplified resist.

32. (Withdrawn) The method according to claim 23, wherein said energy radiation is selected from the group consisting of an ultraviolet ray, a far-ultraviolet ray, a vacuum ultraviolet ray, an electron beam, and an X-ray.

33. (Withdrawn) The method according to claim 23, wherein

said adsorption plate is formed from a metal member, and

an electric field is generated between said adsorption plate and said heating plate during heating in a direction selected from the group consisting of a direction in which said evaporated substance is adsorbed by said adsorption plate, and a direction in which generation of said evaporated substance is suppressed.

34. (Withdrawn) The method according to claim 33, wherein said exposing is performed after said heating.

35. (Withdrawn) The method according to claim 34, wherein said developing is performed after said exposing.

36. (Withdrawn) The method according to claim 33, wherein said exposing is performed before said heating.

37. (Withdrawn) The method according to claim 36, wherein said developing is performed after said heating.

38. (Withdrawn) The method according to claim 33, wherein a potential lower than that of said heating plate is applied to said adsorption plate to adsorb said evaporated substance to a surface of said adsorption plate.

39. (Withdrawn) The method according to claim 33, wherein a potential higher than that of said heating plate is applied to said adsorption plate to suppress generation of said evaporated substance from the resist film.

40. (Withdrawn) The method according to claim 33, wherein a positive potential is applied to said adsorption plate after said heating to eliminate said evaporated substance adsorbed to a surface of said adsorption plate from said adsorption plate.

41. (Withdrawn) The method according to claim 33, wherein said resist film is a chemically amplified resist.

42. (Withdrawn) The method according to claim 33, wherein said energy radiation is selected from said group consisting of an ultraviolet ray, a far-ultraviolet ray, a vacuum ultraviolet ray, an electron beam, and an X-ray.

43. (Withdrawn) A method of a resist pattern formation comprising, in an order named:

forming a chemically amplified resist film on a substrate to be processed,

exposing said chemically amplified resist film by irradiating said chemically amplified resist film with an energy radiation to form an exposure region having a latent image pattern,

heating said chemically amplified resist film, and

developing said chemically amplified resist film,

wherein an energy amount which irradiates said exposure region is corrected before said heating in accordance with a change in effective energy amount caused by a change in sum of an amount of a substance evaporated from said chemically amplified resist in heating and a adsorption amount of said evaporated substance.

44. (Withdrawn) A method of a resist pattern formation comprising, in an order named:

forming a chemically amplified resist film on a substrate to be processed,

exposing said chemically amplified resist film by irradiating said chemically amplified resist film with an energy radiation selected from the group consisting of an ultraviolet ray, a far-ultraviolet ray, a vacuum ultraviolet ray, an electron beam, and an X-ray to form an exposure region having a latent image pattern,

heating said chemically amplified resist film in presence of an air stream, and

developing said chemically amplified resist film,

wherein an energy amount which irradiates said exposure region is corrected before heating in accordance with a change in effective first energy amount caused by a change in sum of an amount of a substance evaporated from said chemically amplified resist in heating and a adsorption amount of said evaporated substance.

45. (Withdrawn) The method according to claim 44, wherein said energy amount is corrected by adjusting an exposure dose in said exposing.

46. (Withdrawn) The method according to claim 45, wherein said exposure dose is adjusted within said exposure region.

47. (Withdrawn) The method according to claim 46, wherein said exposure dose is adjusted based on a ratio of a formed resist pattern.

48. (Withdrawn) The method according to claim 46, wherein

said exposure region is formed by reduction-projecting a pattern of a projection exposure substrate onto said substrate to be processed by a scanning exposure apparatus, and

an irradiation amount condition of said energy radiation is adjusted by a method selected from the group consisting of adjustment of scan speeds of said projection exposure substrate and said substrate to be processed in said scanning exposure apparatus, and adjustment of an incident energy amount incident on said projection substrate in said scanning exposure apparatus.

49. (Withdrawn) The method according to claim 45, wherein an exposure dose in an uppermost-stream exposure region where no exposure region exists in an upstream in a direction of said air stream is adjusted to be substantially higher than that in a downstream exposure region other than said uppermost-stream exposure region.

50. (Withdrawn) The method according to claim 44, wherein said energy amount is corrected separately from said exposing by irradiating said exposure region with an energy amount corresponding to said change in first energy amount.

51. (Withdrawn) The method according to claim 50, wherein said irradiating said exposure region with said energy amount corresponding to said change in first energy amount is performed by irradiating said exposure region with one selected from the group consisting of a lamp, a laser, and an electron beam with a photosensitive wavelength of said chemically amplified resist.

52. (Withdrawn) The method according to claim 44, wherein said energy amount is corrected based on correction amounts sequentially calculated from an upstream to downstream of said air stream.

53. (Withdrawn) The method according to claim 44, further comprising rotating to correct said substrate to be processed between exposure and heating.

54. (Withdrawn) The method according to claim 44, wherein said air stream is supplied in one direction along said substrate to be processed.

55. (Withdrawn) A method of a resist pattern formation comprising, in an order named:

forming a chemically amplified resist film on a substrate to be processed,

exposing said chemically amplified resist film by irradiating said chemically amplified resist film with an energy radiation to form an exposure region having a latent image pattern,

heating said chemically amplified resist film, and

developing said chemically amplified resist film,

wherein an energy amount supplied to said exposure region is corrected in heating in accordance with a change in effective energy amount caused by a change in sum of an amount of a substance evaporated from said chemically amplified resist and a adsorption amount of said evaporated substance in heating.

56. (Withdrawn) A method of a resist pattern formation comprising, in an order named:

forming a chemically amplified resist film on a substrate to be processed,

exposing said chemically amplified resist film by irradiating said chemically amplified resist film with an energy radiation selected from the group consisting of an ultraviolet ray, a far-ultraviolet ray, a vacuum ultraviolet ray, an electron beam, and an X-ray to form an exposure region having a latent image pattern,

heating said chemically amplified resist film in presence of an air stream, and

developing said chemically amplified resist film,

wherein an energy amount supplied to said exposure region is corrected in heating in accordance with a change in effective first energy amount caused by a change in sum of an amount of a substance evaporated from said chemically amplified resist and a absorption amount of said evaporated substance in heating.

57. (Withdrawn) The method according to claim 56, wherein said energy amount is corrected by a heat amount in heating.

58. (Withdrawn) The method according to claim 56, wherein said energy amount supplied to said exposure region is so corrected as to set an uppermost-stream exposure region

where no exposure region exists upstream in a direction of said air stream to be substantially higher in energy than a downstream exposure region other than said uppermost-stream exposure region.

59. (Withdrawn) The method according to claim 56, wherein said air stream is supplied in one direction along said substrate to be processed.

60. (Withdrawn) The method according to claim 56, wherein said energy amount is corrected based on correction amounts sequentially calculated from an upstream to downstream of said air stream.

61. (Withdrawn) The method according to claim 56, further comprising rotating to correct said substrate to be processed between exposure and heating.

62. (Withdrawn) A resist pattern formation method comprising, in an order named:

forming a chemically amplified resist film on a substrate to be processed,

exposing said chemically amplified resist film with an energy radiation,

heating said chemically amplified resist film under an air stream,

supplying developer by supply nozzle to said chemically amplified resist film and forming a desired resist pattern,

wherein a developing speed of said resist pattern is adjusted within said substrate so as to compensate for an effective energy amount change caused by evaporation of substance from said

chemically amplified resist film in heating and adsorption of said substance evaporated from chemically amplified resist film in heating.

63. (Withdrawn) The method according to claim 62, wherein said developing speed is adjusted by controlling a supply condition of said developer from said supply nozzle in uppermost-stream exposure region where no exposure region exists upstream in said air stream in heating and a supply condition of said developer from said supply nozzle in other downstream exposure region.

64. (Withdrawn) The method according to claim 63, wherein said chemically amplified resist is positive, said developing speed is adjusted by controlling a said supply condition in said uppermost-stream exposure region and a said supply condition in said downstream exposure region so as to promote developing in said uppermost-stream exposure region or to suppress developing in said downstream exposure region.

65. (Withdrawn) The method according to claim 63, wherein said chemically amplified resist is negative, said developing speed is adjusted by controlling a said supply condition in said uppermost-stream exposure region and a said supply condition in said downstream exposure region so as to suppress developing in said uppermost-stream exposure region or to promote developing in said downstream exposure region.

66. (Withdrawn) The method according to claim 63, wherein adjustment of said developing speed comprises

obtaining a relationship between said supply condition and said pattern size in said uppermost-stream exposure region and a relationship between said supply condition and said pattern size in said downstream exposure region, and

supplying said developer under said determined supply condition.

67. (Withdrawn) The method according to claim 63, wherein a method of supplying said developer comprises

scanning a linear supply nozzle from one end to the other end of said substrate to be processed while supplying developer from said nozzle, and

forming a liquid film, and

said supply condition is based on a value selected from the group consisting a scan speed, supply amount of said developer, and a distance between said nozzle and substrate to be processed.

68. (Withdrawn) The method according to claim 63, wherein

said air stream direction is selected from the group consisting of a direction from a center to peripheral portion of said substrate to be processed, and a direction from said peripheral portion to center,

said method of supplying said developer comprises setting a linear supply nozzle to said center of said substrate to be processed, and rotating said substrate to be processed while supplying developer from said nozzle and forming a liquid film

and said supply condition is based on supply amount distribution along said linear supply nozzle.

69. (Withdrawn) The method according to claim 62, wherein said developing speed is adjusted by controlling a developer temperature in uppermost-stream exposure region where no exposure region exists upstream in said air stream in heating and a developer temperature in other downstream exposure region.

70. (Withdrawn) The method according to claim 69, wherein said chemically amplified resist is positive, said developing speed is adjusted by controlling a said developer temperature in said uppermost-stream exposure region and a said developer temperature in said downstream exposure region so as to promote developing in said uppermost-stream exposure region or to suppress developing in said downstream exposure region.

71. (Withdrawn) The method according to claim 69, wherein said chemically amplified resist is negative, said developing speed is adjusted by controlling a said developer temperature in said uppermost-stream exposure region and a said developer temperature in said downstream exposure region so as to suppress developing in said uppermost-stream exposure region or to promote developing in said downstream exposure region.

72. (Withdrawn) The method according to claim 69, wherein adjustment of said developing speed comprises

obtaining a relationship between said developer temperature and said pattern size in said uppermost-stream exposure region and a relationship between said developer temperature and said pattern size in said downstream exposure region, and

controlling said developer to said determined developer temperature.

73. (Withdrawn) The method according to claim 69, wherein said developer temperature is controlled by using heat source selected from the group consisting of a hot plate and a lamp heater from a lower surface of said substrate to be processed.

74. (Withdrawn) The method according to claim 69, wherein said developer temperature is controlled by using a lamp heater from an upper surface of said substrate to be processed.

75. (Withdrawn) The method according to claim 62, wherein said developing speed is adjusted by controlling a developer concentration in uppermost-stream exposure region where no exposure region exists upstream in said air stream in heating and a developer concentration in other downstream exposure region.

76. (Withdrawn) The method according to claim 75, wherein said chemically amplified resist is positive, said developing speed is adjusted by controlling a said developer concentration in said uppermost-stream exposure region and a said developer concentration in said downstream exposure region so as to promote developing in said uppermost-stream exposure region or to suppress developing in said downstream exposure region.

77. (Withdrawn) The method according to claim 75, wherein said chemically amplified resist is negative, said developing speed is adjusted by controlling a said developer concentration in said uppermost-stream exposure region and a said developer concentration in said downstream

exposure region so as to suppress developing in said uppermost-stream exposure region or to promote developing in said downstream exposure region.

78. (Withdrawn) The method according to claim 75, wherein adjustment of said developing speed comprises

obtaining a relationship between said developer concentration and said pattern size in said uppermost-stream exposure region and a relationship between said developer concentration and said pattern size in said downstream exposure region, and

controlling said developer to said determined developer concentration.

79. (Withdrawn) The method according to claim 75, wherein said developer concentration is controlled by spraying an air flow to a developer surface from an upper surface of said substrate to be processed.

80. (Withdrawn) The method according to claim 75, wherein said adjustment of developer concentration comprises

forming a developer film on said substrate to be processed into a thin film, and spraying an air flow to a developer surface.

81. (Withdrawn) The method according to claim 62, wherein said air stream direction is selected from the group consisting of a direction from a center to peripheral portion of said substrate to be processed, and a direction from said peripheral portion to center, said adjustment of said developing speed comprises, before said developer is supplied,

supplying a liquid to a resist film surface and

controlling a surface hydrophilicity of uppermost-stream exposure region where no exposure region exists upstream in said air stream in heating and a surface hydrophilicity in other downstream exposure region.

82. (Withdrawn) The method according to claim 81, wherein said liquid is water.

83. (Withdrawn) The method according to claim 81, wherein said liquid is oxidizing liquid.

84. (Withdrawn) The method according to claim 83, wherein said oxidizing liquid is a dissolved gas water selected from the group consisting of an ozonated water, dissolved oxygen water, dissolved carbon monoxide water, and dissolved hydrogen peroxide water.

85. (Withdrawn) The method according to claim 83, wherein said oxidizing liquid is an ozonated water of not more than 5 ppm.

86. (New) The apparatus according to claim 1, wherein the second space is positioned above the first space.

87. (New) The apparatus according to claim 1, wherein the air stream contains the substance.

88. (New) The apparatus according to claim 1, wherein the first opening is formed in a first side surface of the chamber and the second opening is formed in a second side surface of the chamber opposite the first side surface.

89. (New) The apparatus according to claim 6, wherein the adsorption plate is positioned above the support surface.

90. (New) A heating apparatus for a coating film comprising:

a chamber having an inner space;

a heating plate for heating a substrate to be processed, said heating plate having a support surface that supports the substrate to be processed with a coating film in said chamber; and

an adsorption plate arranged in said chamber so as to face the support surface, said adsorption plate adsorbing a substance evaporated from the coating film, and said adsorption plate including a temperature control function for controlling a temperature of said adsorption plate.

91. (New) The apparatus according to claim 90, wherein said temperature control function sets the temperature of said adsorption plate to be higher than a temperature of said substrate to be processed.

92. (New) The apparatus according to claim 90, wherein said temperature control function sets the temperature of said adsorption plate to be lower than a temperature of said substrate to be processed.

93. (New) The apparatus according to claim 90, wherein said adsorption plate is formed from a material selected from the group consisting of an oxide, a nitride, a material with an oxide surface facing said substrate to be processed, and a material with a nitride surface facing said substrate to be processed.

94. (New) A heating apparatus for a coating film comprising:

a chamber having an inner space;

a heating plate for heating a substrate to be processed, said heating plate having a support surface that supports the substrate to be processed with a coating film in said chamber;

an adsorption plate formed from a metal member and arranged in said chamber so as to face the support surface, said adsorption plate adsorbing a substance evaporated from the coating film; and

a voltage generator for generating an electric field between said heating plate and said metal member.

95. (New) The apparatus according to claim 94, wherein said metal member receives a voltage lower than said heating plate from said voltage generator, and adsorbs said evaporated substance.

96. (New) The apparatus according to claim 94, wherein said metal member receives a voltage higher than said heating plate from said voltage generator, and suppresses generation of said evaporated substance.